GMDSS/STCW MODEL COURSE THEORETICAL TEST POOL
January 26, 1998 Edition

GENERAL

1. Please define the acronym AAIC.

2. Please define the acronym GMDSS.

3. What system promises to bring major improvements to maritime Safety and Communications?

4. What is the primary purpose of GMDSS?

5. How often must a compulsory vessel's GMDSS radio station be inspected?
a) Annually, by the U.S. Coast Guard.
b) Annually, by the FCC.
c) Annually, by the FCC, and every six months if the vessel sails outside of Sea Areas A1 and A2.
d) The FCC's annual inspection may be waived if and only if monthly inspections are performed by the vessel's on-board GMDSS Radio Maintainer.

6. Which of the following has been designated for on-scene communications in GMDSS?
a) Channel 24.
b) Channel 2182.
c) Channel 70.
d) Channel 16 on VHF radiotelephone and 2174.5 kHz using MF SITOR.

7. Which of the following frequencies and modes is allocated for distress alerting in GMDSS?
a) 406 MHz via EPIRB.
b) 1626.5-1645.5 via INMARSAT.
c) Channel 70 DSC plus six (6) MF/HF DSC frequencies.
d) All of the above.

8. Which of the following statements concerning maintenance requirements is false?
a) Compulsory vessels sailing in Sea Areas A1 and A2 must provide any one of the three maintenance options which are duplication of equipment, shore-based, or at-sea maintenance capability.
b) Compulsory vessels sailing in Sea Areas A3 and A4 must provide any two of the three maintenance options which are duplication of equipment, shore-based, or at-sea maintenance capability.
c) If shore-based maintenance is used, maintenance services do not have to be completed or performance verified unless the vessel will be sailing to a non-US port.
d) Equipment warranties do not satisfy GMDSS maintenance requirements.

9. Which of the following statements concerning distress alerts is true?

a) Information contained in a distress alert includes the name and position of the distressed vessel, and may include additional information such as the nature of the situation and what kind of assistance that may be required.

b) Distress alerts may be used to alert other vessels, including those in port, of existing navigational hazards.

c) Distress alerts may be used to alert other vessels, including those in port, of existing weather warnings.

d) A vessel in the vicinity of a distress situation may leave the area without notifying the RCC that is overseeing the operation.

10. Which of the following is a functional or carriage requirement for compulsory vessels?

a) A compulsory vessel must carry at least two (2) licensed GMDSS Radio Operators.

b) A compulsory vessel must satisfy certain equipment carriage requirements that are determined by where the vessel sails.

c) A compulsory vessel must be able to transmit and respond to distress alerts.

d) All of the above.

11. Which of the following statements concerning reserve sources of energy is false?

a) While the ship is at sea, there must be available at all times a supply of electrical energy sufficient to operate the radio installations and to charge any batteries used as part of a reserve source of energy.

b) Both the VHF and MF/HF installations must be simultaneously supplied.

c) A means of ensuring a continuous supply of electrical power must be provided to all GMDSS equipment that could be affected by an interruption in power.

d) If a UPS or equivalent is used to supply power to the ship's GPS receiver or other source of positional information, a means must be provided to ensure the continuous supply of this information in the event of a failure to the ship's main or emergency source of power.

12. What is the fundamental concept of the GMDSS?

a) It is intended to automate and improve emergency communications in the maritime industry.

b) It is intended to automate and improve existing digital selective calling procedures and techniques.

c) It is intended to provide more effective but lower cost commercial communications.

d) It is intended to provide compulsory vessels with a collision avoidance system when they are operating in waters that are also occupied by non-compulsory vessels.

13. Which of the following references should the GMDSS Radio Operator consult for information on the proper operation of equipment?

a) ITU List of Equipment Operations.
b) The manufacturer's operator manuals.
c) 47 CFR Part 80.
d) Information is available through SafetyNET channels.

14. Which GMDSS maintenance method provides the only opportunity for real-time corrective action to equipment failures aboard ships at sea?

15. If a vessel is operating 100 miles from a shore and within range of a shore-based MF station, the vessel is operating in what GMDSS area?

16. Which of the following maintenance functions is not the responsibility of the GMDSS Radio Operator?

a) Visual inspection of equipment, including the antenna and associated components.
b) Perform on-the-air verification checks.
c) Perform scheduled testing of the battery's charged condition.
d) Aligning the power output stage for maximum power.

17. Which of the following control selections may result in limited receiving range?

a) Setting the squelch control to its minimum level.
b) The power switch is set to the "high" output position resulting in receiver overloading.
c) Setting the squelch control to its maximum level.
d) Setting the channel selection switch midway between channels 6 and 16.

18. Which of the following channels is designated as the VHF follow-on communications channel and is required in all portable survival craft equipment?

a) Channel 6.
b) Channel 13.
c) Channel 16.
d) Channel 70.

19. Which of the following statements concerning maintenance requirements is true?

a) The options are duplication of equipment, at-sea maintenance, and shore-based maintenance.
b) Compulsory vessels between 300-500 gross tons are required only to provide one maintenance option, while compulsory vessels larger than 500 gross tons and all passenger vessels are required to provide any two of the three maintenance options.
c) The "at-sea" maintenance may be waived if the compulsory vessel carries at least three licensed GMDSS Radio Operators.
d) Compulsory vessels operating in Sea Area A4 are required to carry at least one licensed GMDSS Radio Maintainer.

FCC RULES

1. Please define the acronym FCC.

2. What are the two categories of GMDSS compulsory vessels?

3. How many FCC-licensed GMDSS Radio Operators must be carried aboard every U.S. flag compulsory vessel?

4. Who is responsible to perform distress, urgency and safety communications aboard a compulsory GMDSS vessel?

5. Mandatory fitting of GMDSS equipment is required on all compulsory ships built after what date?

6. How many maintenance methods must be provided by compulsory GMDSS ships sailing into sea areas A1 and A2?

7. How many maintenance methods must be provided by compulsory GMDSS ships sailing into sea areas A3 and A4?

8. At sea, who must perform or supervise all adjustments of radio installations, servicing, or maintenance that may affect the proper operation of the GMDSS radio station?

9. Ships that elect the at-sea maintenance option must carry how many licensed GMDSS Radio Maintainers?

10. On what date must all compulsory vessels comply with GMDSS regulations?

11. How often is a GMDSS ship station inspected?

12. GMDSS Radio Logs are required to contain entries pertaining to all incidents connected with the radiocommunication service which appear to be of importance to the safety of life at sea.

    TRUE FALSE

13. Key letters or abbreviations may not be used in GMDSS Radio Logbooks under any circumstances.

    TRUE FALSE

14. What is the correct procedure to correct entries in GMDSS Radio Logs?

15. How long must GMDSS Radio Logs be retained onboard the ship in original form?

16. How long must GMDSS Radio Logs be retained by the licensee when they relate to a distress situation or disaster?

17. Where is the GMDSS Radio Logbook kept aboard ship?

18. A ship must not depart from any port unless and until the ship is capable of performing all distress and safety functions in the GMDSS functional requirements.

TRUE FALSE

19. If the shore-based maintenance method is used, maintenance services must be completed and equipment performance verified and noted in the ship's logbook before departure from the first port of call entered after any failure occurs.

TRUE FALSE

20. If the at-sea maintenance method is used, a licensed maintainer must be carried. There is no requirement for specific tools, test equipment, technical documentation or spare parts.

TRUE FALSE

21. Every ship required to carry a radiotelephone watch receiver must maintain a continuous watch on 2182 kHz until what date?

22. Which of the following regions lies outside Sea Areas A1, A2, and A3?

a) Sea Areas only apply to INMARSAT footprint areas.
b) Sea Area A3-I (INMARSAT coverage) and Sea Area A3-S (HF SITOR coverage).
c) There are no additional Sea Areas.
d) Sea Area A4.

23. Which of the following is the minimum permit or license requirement of a GMDSS Radio Operator?

a) Holding the Marine Radio Operator Permit is a pre-requisite before the GMDSS Radio Operator Endorsement can be obtained.
b) Holding the General Radiotelephone Operator License with RADAR endorsement is sufficient.
c) Holding a valid GMDSS Radio Operator license is sufficient.
d) Holding either the General Radiotelephone Operator License or the First or Second Class Radiotelegraph license with GMDSS Radio Maintainer's endorsement is sufficient.

24. Which of the following statements concerning a compulsory vessel is false?

a) A conditional or partial exemption may be granted, in exceptional circumstances, for a single voyage outside the sea area for which the vessel is equipped.

b) Once a compulsory vessel's GMDSS station has been fitted and inspected, the station must be inspected only once every five years.

c) All passenger vessels and all cargo vessels that are 300 Gross Tons or larger must comply.

d) Compulsory vessels must carry at least two licensed GMDSS Radio Operators.

25. Which of the following is the minimum permit or license requirement of a GMDSS Radio Maintainer?

a) Holding the Marine Radio Operator Permit is a pre-requisite before the GMDSS Maintainer Endorsement can be obtained.

b) Holding a valid GMDSS Radio Operator license is sufficient.

c) Holding the GMDSS Radio Maintainer license is sufficient.

d) Holding the GMDSS Radio Operator license for at least one year is a pre-requisite to holding the GMDSS Radio Maintainer.

26. Which of the following statements concerning GMDSS Radio Operator requirements is false?

a) Each compulsory vessel must carry at least two licensed GMDSS Radio Operators at all times while at sea.

b) Each compulsory vessel must carry at least two licensed GMDSS Radio Operators at all times while at sea and may elect to carry a GMDSS Radio Maintainer as well.

c) Communications involving safety of life at sea do not have to be logged as long as the compulsory vessel was not involved in such communications.

d) While at sea, adjustments to, and the maintaining of, GMDSS equipment may be performed by the GMDSS Radio Operator as long as the work is supervised by an on-board licensed GMDSS Radio Maintainer.

27. Which of the following items is not an equipment or personnel requirement?

a) Compulsory vessels between 300-500 Gross Tons must carry at least two licensed GMDSS Radio Operators; all passenger vessels or cargo vessels larger than 500 Gross Tons must carry at least three licensed GMDSS Radio Operators.

b) Compulsory vessels must carry at least two licensed GMDSS Radio Operators, regardless of where they sail.

c) Compulsory vessels must meet certain carriage requirements that are determined by where they sail.

d) Compulsory vessels must be capable of both distress alerting and response.

28. Where can GMDSS regulations pertaining specifically to U.S.-flag vessels be found?

a) These are located in CCIR #476.
b) These are located in FCC Part 83.
c) These are published only by the U.S. Coast Guard.
d) These are located in FCC Part 80.

29. Which of the following statements concerning equipment carriage requirements is true?

a) The requirements vary depending on where the compulsory vessel will be operating.
b) The requirements cannot be waived or exempted under any conditions.
c) Compulsory vessels carrying only one licensed GMDSS Radio Operator must carry additional equipment.
d) There are no additional requirements beyond the mandatory carriage of DSC equipment capable of transmitting and receiving distress alerts on MF (2187.5 kHz), HF (8414.5 kHz), and VHF (channel 70).

30. Which of the following statements concerning a compulsory vessel's reserve source of energy is true?

a) It must supply power to GMDSS radio installations and charge any associated batteries.
b) It must not only supply power to GMDSS radio installations and charge any associated batteries, but also provide power for all intraship communications.
c) It must supply power to all survival craft transceivers and associated equipment.
d) It must supply power to associated lighting for a minimum of 12 hours.

31. Which of the following concerning compulsory vessels is true?

a) Vessels over 500 gross tons must carry at least three licensed GMDSS Radio Operators.
b) Passenger vessels between 300-500 gross tons need to carry only one licensed GMDSS Radio Operator, but passenger vessels larger than 500 must carry two licensed Operators.
c) Vessels larger than 500 gross tons must carry certain additional GMDSS equipment than what a vessel between 300-500 gross tons must carry.
d) Vessels between 300-500 gross tons need to carry no more than one EPIRB, SART, and survival craft transceiver, but vessels larger than 500 gross tons must carry two of each unit.

32. In which Sea Area must a compulsory vessel carry either INMARSAT or HF SITOR equipment?

a) This equipment must be carried at all times at sea regardless of where the vessel will be operating.

b) This equipment partially satisfies the carriage requirement for vessels operating in Sea Area A3.

c) This equipment satisfies in full the carriage requirement for vessels operating in Sea Area A2.

d) HF SITOR equipment partially satisfies the carriage requirement for vessels operating in Sea Area A3, but INMARSAT equipment must be carried to satisfy the requirement when the vessel is in Sea Area A4.

33. Which of the following statements concerning type acceptance is true?

a) GMDSS equipment must be commissioned but not type accepted.

b) Certain GMDSS equipment must be type accepted.

c) Certain GMDSS equipment must be commissioned through INMARSAT.

d) All GMDSS equipment must be type accepted.

34. Which of the following terms is defined as a back-up power source that provides power to radio installations for the purpose of conducting distress and safety communications when the vessel's main and emergency generators cannot?

a) Reserve Source of Energy (RSE).

b) Emergency Diesel Generator (EDG).

c) Reserve Source of Diesel Power (RSDP).

d) Emergency Back-up Generator (EBG).

35. Which of the following statements concerning Reserve Sources of Energy (RSE) is true?

a) They must supplant all of the vessel's power needs in case the main and emergency generators fail.

b) They must supply power to radio installations and charge associated batteries.

c) A Reserve Source of Energy is placed in series with the ship's main generator as a backup in case the main fails.

d) They do not have to supply power to radio installation lighting as long as sufficient battery-powered lamps are readily available.

36. A source of electrical lighting must be provided which is capable of adequately illuminating the radio controls for operating the GMDSS installation. What source of energy is used to provide power to this apparatus when the ship's main and emergency power sources have failed?

37. Where a reserve source of energy consists of rechargeable batteries, the recharging source must be capable of recharging the batteries to minimum capacity within 12 hours.

TRUE FALSE

38. When may a compulsory vessel not be allowed to leave port?

a) When the vessel is in an over-carriage condition.

b) When the vessel has arranged for both duplication of equipment AND shore-based maintenance.

c) When the vessel has replaced a required piece of GMDSS-related equipment but its performance has not been verified or logged.

d) When the vessel is carrying only two licensed GMDSS Radio Operators and is capable of performing all required functions.

VHF SCT

1. What form of identification does a GMDSS station use when communicating by routine VHF radiotelephony?

2. What two-way equipment provides line of sight, on-scene voice communications?

3. What emergency equipment is comprised of an integral VHF transmitter, receiver (with push to talk switch), battery, antenna, built in microphone and speaker?

4. What modulation method is often used by VHF Lifeboat Radios?

5. VHF lifeboat radios are capable of operating on duplex, public correspondence channels.

TRUE FALSE

6. Batteries for VHF Survival Craft Transceivers must have sufficient capacity to ensure a minimum of how many hours of operation?

7. Lithium batteries used to power VHF Survival Craft Transceivers may be disposed of in a fire.

TRUE FALSE

8. Lithium batteries are primary cells which may be recharged.

TRUE FALSE

9. When a lithium battery has reached its expiration date, it should be disassembled because the pack contains user serviceable parts.

TRUE FALSE

10. When must a battery used for survival craft equipment be replaced?

11. At a minimum, how much RF power is a VHF Survival Craft Transmitter required to produce?

12. If a VHF Survival Craft Transceiver is capable of producing RF power levels in excess of 1 watt, what must be provided to reduce drain on the battery?

13. For maximum effective communications range, VHF Survival Craft Transceivers should be held horizontally so their antenna is parallel to the earth's surface.

TRUE FALSE

14. The term "sensitivity," as applied to communications equipment, indicates a receiver's ability to:

15. How many VHF Survival Craft Transceivers are required aboard passenger ships?

16. Fixed two-way VHF radiotelephone installations in survival craft must adhere to the same performance standards as what equipment?

17. Until full implementation of GMDSS, two-way VHF radiotelephone transceivers provided aboard ships prior to February 1, 1992 may be used as GMDSS Survival Craft Transceivers provided they are compatible with approved GMDSS two-way VHF radiotelephone apparatus.

TRUE FALSE

18. Audio output of a VHF Survival Craft Transceiver is adjusted by what control?

19. All VHF transceivers to be used for survival craft communications must have which of the following design characteristics?

a) It must be capable of operating on Channel 16.
b) It must be watertight to a depth of 1 meter for 5 minutes.
c) It must use a permanently affixed vertical antenna.
d) All of the above.

20. Which of the following statements concerning VHF survival craft transceivers is false?

a) It must be capable of operating on Channel 13 plus one other channel.
b) Its output power must be at least 250 mW.
c) It is to be used in the simplex (single frequency) mode only.
d) It must be capable of operating on Channel 16 plus one other channel.

21. With what other stations may portable survival craft transceivers communicate?

a) Communications is permitted between survival craft.
b) Communications is permitted between survival craft and ship.
c) Communications is permitted between survival craft and rescue unit.
d) All of the above.

22. Which of the following statements concerning a fixed VHF radiotelephone installation is false?

a) Fixed units operate simplex on channel 16 plus at least one other channel.
b) Fixed units must be watertight for at least 30 minutes at a depth of five (5) meters.
c) The technical requirements for fixed installations are essentially the same as for portable survival craft equipment.
d) Fixed units operate in the routine mode with RF power level no greater than 1 watt.

23. All VHF transceivers to be used for survival craft communications must be capable of which of the following communications?

a) It must be capable of operating on Channel 16 plus one other VHF channel.
b) It must be capable of operating on Channels 16 and 70.
c) It must be capable of operating on Channels 16 and 22A.
d) VHF survival craft transceivers are only required to have Channel 16.

SART

1. Please define the acronym SART.

2. Which of the following statements concerning locating signals in the GMDSS is false?

a) Locating signals are transmitted by survival craft VHF transceivers.
b) Locating signals are transmitted by SARTs.
c) Locating signals are intended to facilitate the finding of a distressed vessel or its survivors.
d) Locating signals are not transmitted by autoalarm generators.

3. Which of the following equipment does not transmit locating signals?

a) SARTs.
b) Survival craft VHF transceivers.
c) Category I EPIRBs.
d) 406 MHz EPIRBs.

4. In which frequency band does a search and rescue transponder operate?

a) 3 GHz.
b) 9 GHz.
c) S-band.
d) 406 MHz.

5. Which shipboard equipment will detect a signal from a SART?

a) S-Band Radar.
b) A DSC receiver.
c) X-Band Radar.
d) The Autoalarm.

6. What does a SART signal sound or look like?

a) It transmits "SOS" and the vessel's name and position in slow speed Morse Code.

b) It will appear on a radar unit's PPI as a line of dots radiating outward with the innermost dot indicating the SART's position.

c) It will appear on a radar unit's PPI as a line of dots radiating outward with the outermost dot indicating the SART's position.

d) None of the above.

7. At what point does a SART begin transmitting?

a) It immediately begins radiating when placed in the "on" position.

b) It must be manually activated.

c) If it has been placed in the "on" position, it will respond when it has been interrogated by a 9-GHz radar signal.

d) If it has been placed in the "on" position, it will begin transmitting immediately upon detecting that it is in water.

8. How can rescue personnel detect that a SART is transmitting in the immediate vicinity?

a) The SART's blips on the PPI will begin arcing and eventually become concentric circles.

b) The DSC unit will react to the SART's signal and respond with the two-tone autoalarm.

c) The SART can provide an approximate location to within a two nautical mile radius, per IMO standards.

d) The SART signal appears as a target which comes and goes; the effect of heavy swells on a SART.

9. Which of the following would most likely prevent a SART's signal from being detected?

a) Signal absorption by the ionosphere.

b) Heavy sea swells.

c) The rescue personnel were monitoring the 10-cm radar.

d) The rescue personnel were monitoring the 3-cm radar.

10. What is the required number of hours that a SART's battery must be able to operate the unit in the standby mode?

a) Eight (8) hours.

b) Three (3) days.

c) Four (4) days.

d) Forty-eight (48) hours.

11. Which of the following statements concerning SARTs is false?

a) Its battery must be capable of operating the SART in the standby mode for at least 96 hours.

b) Its signal is transmitted with vertical polarization to match that of the searching radar equipment.

c) A SART will respond to an interrogating radar signal even under heavy swell conditions.

d) A SART provides a visual or audible signal that informs survivors that assistance may be nearby.

12. Which of the following equipment is the primary source of generating a locating signal?

a) DSC only.

b) DSC and EPIRB.

c) SART and DSC.

d) EPIRB and SART.

13. How can a SART's effective range be maximized?

a) The SART should be placed in water immediately upon activation.

b) The SART should be held as high as possible.

c) Switch the SART into the "high" power position.

d) If possible, the SART should be mounted horizontally so that its signal matches that of the searching radar signal.

14. What conditions will normally cause a SART to operate in the active mode?

a) It will respond only to interrogation by 9-GHz radar signals.

b) A SART will normally respond to interrogation from a searching vessel's radar if the radar antenna is at least 15 meters high.

c) A SART will normally respond to interrogation from a searching aircraft's radar if the radar's output power is at least 10,000 watts and the aircraft is at a height of 3000 feet and within 30 nautical miles.

d) All of the above.

15. Which of the following statements concerning SARTs is false?

a) A SART clearly indicates its location on 9-GHz radar PPI.

b) When it has been interrogated, a SART emits an audible tone that informs survivors that assistance may by nearby.

c) Once it has been placed in the "on" position, a SART will begin transmitting immediately upon detecting that it is in water.

d) A SART is intended to be hand-carried to a survival craft.

16. Which of the following statements concerning testing and maintenance of SARTs is true?

a) An at-sea GMDSS maintainer is not able to test a SART as it is hermetically sealed.
b) Testing a SART should be performed only in controlled environment as a test signal may be misinterpreted as a genuine distress situation.
c) A SART's battery must be replaced within ninety (90) days after the expiration date imprinted on the unit.
d) All of the above.

17. Why should SART testing and maintenance be kept to a minimum?

a) A test signal may interfere with proper and safe navigation.
b) Testing the SART places an inordinate drain on its battery.
c) Possibility of misinterpretation as a genuine distress situation.
d) All of the above.

18. Which of the following items is not the responsibility of the GMDSS Radio Operator?

a) Inspecting and cleaning the SART's container, and clearing the immediate storage area of any debris or obstacles.
b) Measuring the SART's transmitted frequency.
c) Placing the SART in the test mode and verifying that the nearby PPI shows concentric circles.
d) Ensuring the SART’s batteries are replaced before their expiration date.

19. Why would a humidity indicator be incorporated into a SART?

a) It indicates relative humidity, which may affect how well the SART's signal carries.
b) It is used to indicate whether damage-causing moisture has been detected inside the unit.
c) After releasing the SART to the sea, this indicates that the unit has been activated.
d) All of these.

20. How can the SART's audible tone monitor be used?

a) It informs survivors that assistance may be nearby.
b) It informs survivors when the battery's charge condition has weakened.
c) It informs survivors when the SART switches to the "standby" mode.
d) It informs survivors that a nearby vessel is signalling on DSC.

21. Which of the following statements concerning vessels that are required to carry only one SART is true?

a) Vessels between 300-500 gross tons are only required to have one SART.
b) This unit should be secured in a cabinet below deck until needed.
c) Passenger vessels are only required to have one SART.
d) If the vessel is more than 500 gross tons, the SART must be kept with the EPIRB for rapid deployment.

22. Which of the following would not be a normal function when testing or performing maintenance on a SART?

a) The GMDSS Radio Operator may conduct 9-GHz voice communications with nearby vessels to coordinate SART testing.

b) The GMDSS Radio Operator should inspect the SART's container for apparent damage.

c) The GMDSS Radio Operator should inspect the battery's expiration.

d) The GMDSS Radio Operator should conduct a brief test using the vessel's radar.

23. Why is it important to limit the duration of testing a SART?

a) Excessive testing causes "burn in" on the vessel's radar PPI.

b) Testing a SART should be performed only in controlled environment as a test signal may be misinterpreted as a genuine distress situation.

c) To prevent overheating, a SART requires sufficient ventilation which is significantly reduced when the SART is being tested.

d) If another SART is testing at the same time, the two signals will cause damage to the unit that transmitted them.

24. How is a SART signal radiated?

a) The antenna is vertically polarized to match the polarization of ship radars.

b) The antenna is horizontally polarized to match the polarization of ship radars.

c) The antenna is both vertically and horizontally polarized to compensate for rocking from sea swells.

d) The antenna is circularly polarized to compensate for rocking from sea swells.

25. What portable device transmits locating signals on 9 GHz?

26. Search and Rescue Transponders are normally fixed installations in liferafts.

TRUE FALSE

27. When activated from a ship in distress or survival craft, a SART provides what type of indication to alert survivors whenever a RADAR has triggered the SART?

28. SARTs must have sufficient battery capacity to last for how many hours in the standby mode?

29. SARTs must have sufficient battery capacity to last for how many hours in the active mode?

30. What signals are transmitted by mobile units in distress or by survival craft for the purpose of providing searching units with a signal that can be used to determine the bearing to the transmitting stations?

31. What radar do you turn on if you are searching for a SART?

EPIRB

1. Please define the acronym LUT.

2. Please define the acronym MCC.

3. Which of the following equipment is not a source of locating signals?
a) EPIRBs that transmit on 406 MHz.
b) Survival craft VHF transceivers that provide a beacon on 121.5 MHz.
c) COSPAS-SARSAT EPIRBs.
d) SARTs operating on 9 GHz.

4. Which of the following statements concerning homing signals in the GMDSS is false?
a) A homing signal provides a bearing for rescue personnel to follow to the signal's source.
b) A homing signal is detected by the COSPAS-SARSAT satellites.
c) A homing signal cannot be detected by a GPS receiver.
d) A homing signal may be transmitted by equipment attached to the survival craft.

5. Which piece of required GMDSS equipment is the primary source of transmitting locating signals?
a) Radio Direction Finder (RDF).
b) An EPIRB transmitting on 406 MHz.
c) Survival Craft Transceiver.
d) A SART transmitting on 406 MHz.

6. Which EPIRB transmits a distress alert that is received and relayed by an INMARSAT satellite?
a) Class A EPIRBs.
b) Class B EPIRBs.
c) L-band EPIRBs.
d) Category I EPIRBs.

7. Which of the following satellite systems is of particular importance to search and rescue missions under GMDSS?
a) COSPAS/SARSAT
b) AMSAT
c) NASA/Arienne
d) COMSAT

8. Which of the following statements concerning COSPAS-SARSAT is true?
a) EPIRBs are units that are used as alerting devices.
b) These are satellites in a low-earth polar orbit that detect EPIRB beacons on 406 MHz and relay the information to an earth-side Local User Terminal (LUT).
c) The Doppler frequency measurement concept is used to determine the EPIRB's location.
d) All of the above.

9. Which of the following statements concerning COSPAS-SARSAT is false?
a) EPIRBs are used primarily for distress alerting.
b) These satellites are looking specifically for EPIRB signals on 406 MHz.
c) These satellites use Doppler shift measurement to determine the location of the beacons.
d) After initiating a call request and selecting the CES, these satellites may be used for commercial messages.

10. Which of the following EPIRBs is most likely to transmit a distress alert signal?
a) S-Band EPIRBs.
b) 406 MHz EPIRBs.
c) Class A EPIRBs.
d) 121.5/243 MHz EPIRBs.

11. Which of the following would best be used for visual detection of a distressed vessel?
a) A 9-GHz SART's beacon.
b) An EPIRB's strobe light.
c) A 121.5-MHz EPIRB beacon.
d) A406-MHz EPIRB beacon.

12. Which of the following is normally found on EPIRBs that are detected by satellites?
a) A strobe light.
b) A 5-watt 406-MHz beacon.
c) A bracket designed to allow the EPIRB to automatically float-free.
d) All of the above.

13. Which of the following statements concerning satellite EPIRBs is true?
a) Once activated, these EPIRBs continuously send up a signal for use in identifying the vessel and for determining the position of the beacon.
b) The coded signal identifies the nature of the distress situation.
c) The coded signal only identifies the vessel's name and port of registry.
d) If the GMDSS Radio Operator does not program the EPIRB, it will transmit default information such as the follow-on communications frequency and mode.

14. What system intercepts and locates signals from Category 1 EPIRBs?

15. What system intercepts and locates signals from L-Band EPIRBs?

16. What term describes ground stations used to receive distress alert data from COSPAS SARSAT satellites?

17. What center evaluates COSPAS-SARSAT data and forwards it to the appropriate RCC depending on distress position?

18. Please state one advantage of Category 1 EPIRBs over an older Class A EPIRB.

19. How often do Category 1 EPIRBs transmit a distress alert on 406.025 Mhz?

20. How long is a 406.025 Mhz distress alert transmission from a Category 1 EPIRB?

21. How does a Category 1 EPIRB identify itself during the distress alert transmission?

22. A Category 1 EPIRB contains a low power homing transmitter that emits a signal on what frequency?

23. How often does the homing transmitter send out its signal?

24. What visual indication does a Category 1 EPIRB provide when transmitting?

25. Registration of Category 1 EPIRBs is required by FCC rules. What organization maintains database records of registered EPIRBs aboard U.S. vessels?

26. Registration of Category 1 EPIRBs is free of charge in the United States.

TRUE FALSE

27. What must be affixed to a Category 1 EPIRB to indicate proof of beacon registration?

28. Category 1 EPIRBs are registered once, on a life time basis.

TRUE FALSE

29. COSPAS-SARSAT satellites are in geostationary orbit.

TRUE FALSE

30. Currently, the majority of EPIRB emergency transmissions are false alarms.

TRUE FALSE

31. What precaution should be taken to avoid transmitting a false alarm when a Category 1 EPIRB is removed from its mounting bracket?

32. When should Category 1 EPIRB registration data be updated?

33. Which type of EPIRB is approved for GMDSS compulsory vessels?

34. How can a Category 1 EPIRB be activated?

35. What is one precaution that should be taken when shipping a Category 1 EPIRB to the manufacturer for service?

36. EPIRBs should be activated in distress conditions where there is grave and imminent danger, or when requested by a cognizant SAR authority. When should people in distress turn an EPIRB off?

37. How often must a category 1 EPIRB be tested to meet USCG regulations?

38. At what depth should a category 1 EPIRB float free from a sinking ship?

39. Some models of EPIRBs use sensors to detect when the EPIRB is in fresh or salt water. These EPIRBs activate automatically regardless of switch position.

TRUE FALSE

40. The inadvertent activation of an EPIRB or activation of an unregistered EPIRB may result in fines up to $10,000.00.

TRUE FALSE

41. User error is the major cause of false alarms over the COSPAS-SARSAT system.

TRUE FALSE

42. When activated, an EPIRB should be placed in the water to optimize the antenna system.

TRUE FALSE

43. When activated, an EPIRB should be secured to the life raft or survival suit with an attached lanyard.

TRUE FALSE

44. An Automatic Release Mechanism (ARM) automatically releases a Category 1 EPIRB from its bracket when it becomes submerged. When must ARMs be replaced?

45. L-Band EPIRBs operate through what satellite system?

46. L-band EPIRBs provide real-time global coverage for distress alerts.

TRUE FALSE

47. What term describes the ground stations used to process distress alerts from L-Band EPIRBs?

48. L-Band EPIRBs are designed to float free for automatic activation when a vessel sinks.

TRUE FALSE

49. If an L-Band EPIRB contains a flashing strobe light, its batteries must operate the transmitter for what period of time?

50. L-Band EPIRBs must be approved by what satellite organization?

51. L-Band EPIRBs are currently approved for use in the United States by the Coast Guard.

TRUE FALSE

52. L-Band EPIRBs transmit distress alerts to geostationary satellites.

TRUE FALSE

53. L-Band EPIRBs may be equipped with an integral SART unless other facilities are included for automatic position updating after activation.

TRUE FALSE

54. What frequency band does the L-Band EPIRB transmit in?

55. What organization operates the U.S. Mission Control Center for the COSPAS-SARSAT system?

56. What two frequencies are included in a COSPAS-SARSAT EPIRB?

57. Please define the acronym EPIRB.

INMARSAT

1. Please define the acronym ADE.

2. Please define the acronym AOR-E.

3. Please define the acronym AOR-W.

4. Please define the acronym BDE.

5. Please define the acronym CES.

6. Please define the acronym IOR.

7. Please define the acronym LES.

8. Please define the acronym MES.

9. Please define the acronym NCS.

10. Please define the acronym POR.

11. Please define the acronym PSTN.

12. Please define the acronym SES.

13. How should the "duplication of equipment" maintenance option be applied to INMARSAT antennas?

a) This rule does not apply to INMARSAT-A radomes because of the prohibitive size of the antenna.

b) This rule states that the vessel needs to carry only one INMARSAT antenna if the vessel will operate exclusively in Sea Areas A1 and A2, but the vessel must carry two INMARSAT antennas if it will operate in A3 or A3/A4.

c) This rule states that the vessel must carry two INMARSAT antennas even when the INMARSAT unit is operated in the HF range.

d) This rule requires that two antennas be carried.

14. What is the meaning of the operational signal DER?

15. What is the meaning of the operational signal NC?

16. What is the meaning of the operational signal WRU?

17. INMARSAT is a satellite service used solely by maritime users.

TRUE FALSE

18. What satellite system is used to support direct dial telephone calls, telex messages, facsimile transmittals, electronic mail and data transfer?

19. What are the three basic segments of the INMARSAT system?

20. How many ocean regions are currently available in the INMARSAT system?

21. List the ocean regions currently available in the INMARSAT system.

22. What is the telex country code for the AOR-E satellite?

23. What is the telex country code for the AOR-W satellite?

24. What is the telex country code for the POR satellite?

25. What is the telex country code for the IOR satellite?

26. What is the telephone country code for the AOR-E satellite?

27. What is the telephone country code for the AOR-W satellite?

28. What is the telephone country code for the POR satellite?

29. What is the telephone country code for the IOR satellite?

30. What INMARSAT satellite is located at approximately 15 degrees West over the equator?

31. What INMARSAT satellite is located at approximately 55 degrees West over the equator?

32. What INMARSAT satellite is located at approximately 64 degrees East over the equator?

33. What INMARSAT satellite is located at approximately 178 degrees East over the equator?

34. Connectivity between an INMARSAT satellite and the terrestrial telecommunications networks are provided by what type of ground station?

35. List one INMARSAT service provider that operates a LES in the U.S.

36. What station monitors and controls communications within each INMARSAT ocean region?

37. Which INMARSAT service provides two-way direct dial telephone and real-time telex communications from a mobile SES to any location on earth?

38. INMARSAT-A is an analog service which will be phased out in the next 10-15 years.

TRUE FALSE

39. What is the replacement service for INMARSAT-A?

40. What service utilizes digital technology to offer the same multimode functional capabilities of INMARSAT-A?

41. Per minute service rates for INMARSAT-B will be higher than per minute service rates for INMARSAT-A.

TRUE FALSE

42. INMARSAT-B Ship Earth Stations utilize a directional parabolic "dish" antenna.

TRUE FALSE

43. INMARSAT-B Ship Earth Stations require no input from the ship's gyro compass for antenna tracking.

TRUE FALSE

44. INMARSAT-C Mobile Earth Stations use an omnidirectional antenna; "shadowing" effects are therefore eliminated.

TRUE FALSE

45. INMARSAT-C MES terminals require no input from the ship's gyro compass for antenna tracking.

TRUE FALSE

46. INMARSAT-C service provides two-way, store-and-forward messaging capabilities.

TRUE FALSE

47. INMARSAT-C Land Earth Stations can deliver messages via facsimile, telex and e-mail systems.

TRUE FALSE

48. List two INMARSAT systems that are approved for use in the GMDSS.

49. INMARSAT-M is a GMDSS approved satellite service.

TRUE FALSE

50. INMARSAT-M service offers telephone and low speed fax/data capabilities.

TRUE FALSE

51. INMARSAT-M antennas are smaller antennas than INMARSAT-A or INMARSAT-B.

TRUE FALSE

52. INMARSAT-M antennas are omnidirectional.

TRUE FALSE

53. When a Ship Earth Station installation is completed, what process is used to initiate it into the INMARSAT system?

54. Distress Message Controllers are used to centralize control of MF/HF/VHF DSC terminals, and INMARSAT- SES terminals.

TRUE FALSE

55. What sea area is within the coverage of an INMARSAT satellite in which continuous alerting is available?

56. What INMARSAT system provides for voice channel and real-time telex capability?

57. What INMARSAT system provides for Distress Alerting, Text Messaging, and Low Speed Data via packet oriented protocol?

58. What could cause a vessel's GMDSS station to experience trouble with tracking a particular INMARSAT satellite when the vessel is making course changes?

a) Gyro data input to the shipboard INMARSAT system could have failed.
b) The course change may have placed the vessel's mainmast between the vessel's INMARSAT antenna and the satellite.
c) The vessel may be on the edge of the satellite's footprint.
d) All of these.

59. Which of the following INMARSAT services provides communications by telephone, telex, facsimile (fa), and data?

A) INMARSAT-A.
b) INMARSAT-C.
c) SafetyNET.
d) VHF-FM.

60. Which key must be used to signal the end of a manually-dialed number in a telephone call made via INMARSAT-A?

a) The colon (":") key.
b) The "ENTER" key.
c) The plus ("+") key.
d) The pound ("#") key.

61. Which key must be used to signal the end of a manually-dialed number in a telex via sent via INMARSAT-A?
a) The colon (":") key.
b) The "ENTER" key.
c) The plus ("+") key.
d) The pound ("#") key.

62. How is maximum coverage provided by satellites in the GMDSS?
a) There are four satellites in polar orbit.
b) There are four satellites in geostationary orbit.
c) Each service (INMARSAT-A, -B, -C, and -M) has four satellites in orbit.
d) GMDSS optimizes coordinated use of COSPAS-SARSAT satellites.

63. Which satellite system supports both ship-to-shore and shore-to-ship facsimile (fa) communications?
a) INMARSAT-A.
b) INMARSAT-C.
c) COSPAS-SARSAT.
d) INMARSAT-M.

64. What priority code is associated with routine calls made via INMARSAT-A?
a) 0.
b) 1.
c) 2.
d) 3.

65. What is the service code for requesting automatic (unattended) service through INMARSAT-A?
a) It depends on which carrier will be used for routing the call.
b) 11#.
c) 01.
d) 00.

66. What identification code should be entered to select the Southbury Coast Earth Station?
a) 00.
b) 01.
c) 10.
d) 11.

67. What identification code should be entered to select the Santa Paula (COMSAT) Coast Earth Station?
a) 00.
b) 11.
c) 10.
d) 01.

68. What identification code should be entered to select the Staten Island Coast Earth Station for INMARSAT-A?
a) 00.
b) 13.
c) 10.
d) 11.

69. What identification code should be entered to select the Niles Canyon (IDB Coast Earth Station)?
a) 00.
b) 11.
c) 10.
d) 13.

70. Which CES should a GMDSS Radio Operator select if his/her vessel is off the Pacific Coast of the United States?
a) Goonhilly.
b) Anatolia.
c) Niles Canyon or Santa Paula.
d) RCC Alameda.

71. Which CES should a GMDSS Radio Operator select if his/her vessel is off the Atlantic Coast of the United States?
a) Southbury or Staten Island.
b) Santa Paula.
c) RCC New York.
d) Anatolia.

72. Which telephone services are available through INMARSAT-A?
a) Person-to-person calls.
b) Collect calls.
c) Credit card calls.
d) All of these.

73. What is an INMARSAT "Subscriber Number"?
a) This identifies the vessel's selective calling (selcall) number.
b) This is the INMARSAT number that is assigned to a unit for incoming calls.
c) This is the vessel's INMARSAT registration number for accounting authority purposes.
d) This number is used for receiving news and other optional services in FleetNET.

74. What is the correct dialing sequence for placing a ship-to-shore telephone call via INMARSAT-A to a Florida-based company whose number is 850-233-7769 and using the Southbury CES?
a) 1018502337769.
b) #0118502337769#.
c) 01#0018502337769#.
d) 18502337769#.

75. What is the best method to overcome the effects of shadowing when attempting to place an INMARSAT-A call?
a) A small course change should work.
b) Select a CES that serves the INMARSAT satellite that will handle the call.
c) Installing a shadow correction filter will compensate in fringe areas.
d) Turning on compandors will work in all but extreme cases of shadowing.

76. In certain GMDSS satellite equipment, which of the following occurs after the GMDSS Radio Operator who is initiating a telephone call via INMARSAT-A dials the CES' identification code followed by the pound ("#") sign?
a) A steady tone is heard.
b) The telephone operator comes on.
c) A ring-back tone is heard for about 1.5 seconds.
d) A wailing tone is heard.

77. What should be dialed after entering the CES identification and pound ("#") sign to obtain operator assistance when using INMARSAT-A?
a) 00#.
b) 01#.
c) 10#.
d) 11#.

78. What should be dialed after entering the CES identification and pound ("#") sign to place a telephone call via INMARSAT-A and bill the call to a credit card?
a) 36#.
b) The digits 00 followed by the country code, the credit card number, the expiration date and ending with the "#" sign.
c) Credit card billing is impossible via INMARSAT.
d) The Shore I.D. and "#" sign followed by the digits 00, then the Country Code, subscriber's number and ending with the "#" sign.

79. What do the characters "GA+" mean when they appear in a telex communications sent by INMARSAT-A?
a) "Global Accounting".
b) "Go ahead".
c) "General Advisory".
d) This abbreviation has no meaning to a telex call as the plus ("+") sign is used only in conjunction with voice calls.

80. Which of the following calls via INMARSAT-A will be the least expensive?
a) All INMARSAT-A calls are made at uniform rates, regardless of mode.
b) Voice calls placed from one ship to another ship.
c) Telex calls placed from a ship to a shore-based location.
d) Telex calls placed from one ship to another ship.

81. Which of the following calls via INMARSAT-A will be the most expensive?
a) All INMARSAT-A calls are made at uniform rates, regardless of mode.
b) Voice calls placed from one ship to another ship.
c) Telex calls placed from a ship to a shore-based location.
d) Telex calls placed from one ship to another ship.

82. What is the purpose of using compandors?
a) They provide noise and echo-canceling which are used in TELEX operation.
b) They provide noise and echo canceling which are used in voice operation.
c) They filter out channel noise in order to enhance distress communications.
d) They provide a narrow frequency channel to enable high-speed data communications.

83. What is meant by "CES"?
a) Coast Earth Satellite.
b) Coast Earth Station.
c) Central Equatorial Station.
d) Coastal Equivalent Station.

84. How can the cost of a telephone call placed via INMARSAT-A be minimized?
a) Place the call during high volume traffic hours.
b) Various discount rates may apply during certain times of the day or during the year.
c) Daytime rates are normally lower.
d) There are no reduced rates available.

85. What is meant by "AOR"?
a) Atlantic Operations Region.
b) Atlantic Ocean Region.
c) Actual Ocean Region.
d) Actual Operator Response.

86. What is meant by an INMARSAT satellite's "elevation"?
a) The angle of the satellite to the equator.
b) The satellite height above the horizon as seen from the ship.
c) The relative bearing of the satellite to the vessel's course.
d) The height of the antenna above the main deck.

87. What is meant by an INMARSAT-A system's "heading readout"?
a) The difference angle of the vessel's steered course to North.
b) The angle between north and the horizontal satellite direction as seen from the ship.
c) The ship's plotted position.
d) The gyro reading of the vessel's steered course.

88. If an INMARSAT-A station loses its gyro feed, how may communications be enabled?
a) The satellite's heading, azimuth, and elevation must be entered for manual acquisition.
b) Manually repositioning the antenna is sufficient because the antenna is omnidirectional.
c) Once gyro feed is lost, communications via INMARSAT is impossible.
d) Gyro feed is essential only to INMARSAT-C.

89. What will most likely happen if a satellite's elevation becomes very small?
a) Changes in the elevation have no effect on communications.
b) Communications range through the satellite will likely be maximized.
c) Communications through the satellite will likely become difficult or impossible to establish.
d) This indicates that the vessel should effect a course change to minimize shadowing.

90. When referring to INMARSAT satellites, what does the term "rewind" mean?
a) The feedline carrying the signal to the radome is recoiled when the SES unit experiences a high elevation.
b) The satellite is reverting to its original position in relation to the land-based coast earth station (CES).
c) The radome's antenna cannot continue turning in one direction and is swiveling back to the other direction.
d) The satellite has reached the limit of assigning its available communications channels and is resetting to the beginning.

91. Which of the following statements concerning exposure to radiation is true?
a) The INMARSAT unit's radome filters out potentially dangerous UV rays.
b) Certain INMARSAT systems will automatically transmit when called and can expose an individual to harmful radiation.
c) INMARSAT-A antennas are safe because they are omnidirectional.
d) An INMARSAT-C antenna must be carefully avoided because it focuses the transmitter's signal into a fine beam of energy.

92. Which of the following maintenance functions can a GMDSS Radio Operator perform?
a) The Operator can make fine internal adjustments to the transmitter as long as the output power does not change by more than one percent.
b) The Operator is responsible for ensuring that INMARSAT antennas are free of built-up soot and clear of obstacles.
c) All levels of maintenance must be performed by a licensed GMDSS Radio Maintainer.
d) The Operator may install an EPROM in order to ensure that the equipment continues to operate within legal constraints.

93. Why do certain INMARSAT stations have multiple subscriber numbers?
a) An additional subscriber number allows the user to route incoming calls to a dedicated line such as to a computer or fax machine.
b) An additional subscriber number allows the user to interface the vessel's INMARSAT-C unit with the INMARSAT-A to provide additional SafetyNET coverage.
c) An additional subscriber number provides the user with an extra line in case the primary circuit is busy.
d) An additional subscriber number provides extra distress alerting capability.

94. What is the purpose of including a string of five periods (". . . . .") in an INMARSAT-A telex message?
a) This is an ellipse that is used to signify that certain redundant text has been deleted.
b) This instructs the coast earth station to automatically disconnect the telex connection and sever the satellite communications.
c) A string of five periods will not affect an INMARSAT-A telex transmission.
d) This instructs the coast earth station to automatically disconnect the telex connection and keep the shipboard unit in communications with the satellite.

95. What is the purpose of including a string of five periods (". . . . .") in an INMARSAT-C telex message?

a) This is an ellipse that is used to signify that certain redundant text has been deleted.
b) This instructs the coast earth station to automatically disconnect the telex connection and sever the satellite communications.
c) A string of five periods will not affect an INMARSAT-A telex transmission.
d) This instructs the coast earth station to automatically disconnect the telex connection and keep the shipboard unit in communications with the satellite.

96. What is the effect of depressing the "CALL REQUEST" button on a INMARSAT Standard-A SES on a system so equipped, when engaged in active communications?

a) This will have no effect.
b) This will activate a distress alarm tone.
c) This may terminate existing communications.
d) This will cause the transmitter to switch into low power mode.

97. Which of the following statements concerning INMARSAT-A is true?

a) This system relies upon a highly directional signal that is transmitted to the satellite.
b) Shipboard obstructions can cause shadowing to both inbound and outbound satellite signals.
c) Telex communications may be possible when voice calls may be impossible.
d) All of the above.

98. Which of the following equipment is intended to be interfaced with an INMARSAT-A unit?

a) On-board personal computer.
b) Digital Selective Calling controller.
c) Autoalarm generator.
d) Shipwide signal distribution panel.

99. Which of the following steps is used to place a vessel's INMARSAT-A unit into service?

a) Commissioning through tests with another vessel that is already GMDSS compliant and certified.
b) Commissioning through the IMO.
c) Commissioning through the U.S. Coast Guard.
d) Commissioning through the national INMARSAT signatory representative.

100. What dialing sequence would be entered to place a telex call via INMARSAT-A to a company in the United States whose telex number is 49617153?
a) 01#002349617153#.
b) 01+2349617153+.
c) 01+002349617153+.
d) 01+00149617153+.

101. What dialing sequence must be entered to request Operator Assistance by telex through INMARSAT-A?
a) Operator assistance is not available through INMARSAT-A, but is available through INMARSAT-C.
b) 11#.
c) 01#.
d) 11+.

102. What dialing sequence must be entered to request Operator Assistance by voice through INMARSAT-A?
a) Operator assistance is not available through INMARSAT-A, but is available through INMARSAT-C.
b) 11#.
c) 01#.
d) 11+.

103. How are charges determined for a ship-to-ship facsimile (fa) communication by INMARSAT-A?
a) Fax rates are about one-half that of ship-to-ship voice communications.
b) Fax rates are about twice that of ship-to-ship voice communications.
c) Fax rates are about the same as for ship-to-ship voice communications.
d) Fax communications are not possible through INMARSAT-A.

104. How are charges determined for a ship-to-ship voice communication by INMARSAT-C?
a) Voice communication rates for ship-to-ship calls through INMARSAT-C are about twice those for ship-to shore INMARSAT-C calls.
b) Voice communication rates through INMARSAT-C are about half that for voice communications through INMARSAT-A.
c) Voice communication rates are determined by the length of the call through INMARSAT-C.
d) Voice communications are not possible through INMARSAT-C.

105. Which of the following statements concerning INMARSAT service rates is true?
a) Charges for a voice call placed through INMARSAT-C begin to accrue when the number being called is answered.
b) Charges for a voice call placed through INMARSAT-A begin to accrue when the message reference number is received from the coast earth station.
c) Charges for a voice call placed through INMARSAT-A begin to accrue when the number being called is answered.
d) Charges for a voice call placed through INMARSAT-A begin to accrue when the coast earth station acknowledges the call.

106. Which of the following statements concerning INMARSAT-C is true?
a) Telex communications are established in the ARQ mode.
b) Telex communications are conducted with real-time connectivity.
c) Telex communications are less expensive than voice communications.
d) Telex communications are delivered on a store-and-forward basis.

107. Which of the following statements concerning INMARSAT-C is true?
a) Voice calls through INMARSAT-C are more expensive than telex calls through the same system.
b) A vessel may send and receive fax messages through INMARSAT-C.
c) A vessel can establish voice communications through INMARSAT-C on a dedicated channel.
d) Telex messages can be sent or received through INMARSAT-C.

108. How does a vessel's INMARSAT identify itself in a telex call?
a) By its International Radio Call Sign (IRCS).
b) By its selcall.
c) By its answerback.
d) By its Maritime ID Digits.

109. How are charges calculated for a ship-to-ship telex message sent by INMARSAT-C?
a) Charges begin when the vessel being called responds with its answerback.
b) Charges are determined by the size of the telex message.
c) Charges for a telex call are about one half that of a voice call.
d) Charges for all calls are the same, regardless of their mode.

110. Which of the following statements concerning INMARSAT-C is true?
a) Telex communications are conducted with real-time connectivity.
b) Two-way real-time telex communications can exist with prior arrangement.
c) Telex messages are delivered on a store-and-forward basis.
d) Fax messages can be both sent and received through INMARSAT-C.

111. Which of the following actions is not the responsibility of the GMDSS Radio Operator?
a) Logging on to the INMARSAT-C system to receive SafetyNET broadcasts.
b) Adjusting the INMARSAT transmitter's power amplifier to maximize its output power.
c) Selecting which CES will handle certain INMARSAT calls.
d) Clearing debris or stack deposits from the radome.

112. Which of the following best describes a shipboard INMARSAT-C system?
a) A satellite communications system that provides real-time connectivity.
b) A small, lightweight terminal capable of providing satellite store-and-forward message communications.
c) A small, lightweight terminal used to transmit messages over high frequency (HF) bands to communicate through a satellite.
d) A satellite communications system that also provides continuous Digital Selective Calling coverage for all ocean regions.

113. Which action must be taken to ensure that incoming message traffic of all priority levels will be received through INMARSAT-C?
a) The system needs only to be commissioned and turned on.
b) No additional action is necessary after turning on the receiver and aiming the antenna at the desired satellite.
c) The GMDSS Radio Operator must log on to the desired satellite.
d) The GMDSS Radio Operator must log on to the desired satellite and receive the message reference number (MRN) from the CES.

114. Which of the following actions should be taken once the vessel is berthed and will not leave port again for several weeks?
a) The GMDSS Radio Operator must notify the NCS that the vessel will be off-line, and wait for the NCS to acknowledge with a confirmation number that must be logged.
b) The INMARSAT-C system can be powered down without taking additional steps once the GMDSS Radio Operator has ensured that all incoming SafetyNET messages have been received and stored.
c) The GMDSS Radio Operator must log off of the INMARSAT system.
d) The GMDSS Radio Operator must transmit an all-ships alert to notify all vessels within the satellite's footprint that the vessel will be off-line.

115. Which of the following messages is received from a coast earth station in response to placing a telex call request by INMARSAT-A?

a) The coast earth station provides the communications link with the number being called but otherwise does not send a message of any kind to either party.
b) The coast earth station notifies the party being called by sending a "message waiting number" (MWN).
c) The coast earth station transmits a "message reference number" (MRN) to the station placing the call.
d) The coast earth station monitors all transmissions from users to ensure that communications are conducted within stated guidelines and transmits a "message acceptance number" (MAN).

116. What is the average length of time required for a telex sent by INMARSAT-C to be delivered to the addressee?

a) All INMARSAT-C communications are made with real-time connectivity so there is no delay in message delivery.
b) The average delivery time for a telex sent by INMARSAT-C is about 10 minutes.
c) Date/time notification of delivery is possible only through INMARSAT-A.
d) The average delivery time for a telex sent by INMARSAT-C is about 10 minutes, but fax and data messages sent by INMARSAT-C require about 30 minutes for delivery.

117. How are telex messages sent by INMARSAT-C delivered?

a) They are delivered on a store-and-forward basis.
b) Most are delivered on a store-and-forward basis, but can be delivered in real-time that will be more expensive.
c) They are delivered with no time delay if both the sending and receiving parties are using the same satellite.
d) Delivery time is enhanced when the station sending the telex detects a low (minimal) satellite elevation.

118. Which satellite(s) would most likely be selected for use when the vessel is operating off the eastern shore of the United States?

a) AOR-W.
b) IOR-E.
c) POR.
d) Either AOR-W and IOR-E will work.

119. What is the primary function of an NCS?

a) To monitor and control communications through the INMARSAT satellite for which it is responsible.

b) To provide direct communications between the INMARSAT station placing a call and the station receiving the call.

c) To provide multi-mode communications between the INMARSAT station placing a call and the coast radio station that will deliver it.

d) To determine which satellite is best suited to provide communications between the INMARSAT station placing a call and the station receiving the call.

120. What is the primary function of a CES?

a) To monitor and control communications through the INMARSAT satellite for which it is responsible.

b) To provide direct communications between the INMARSAT station placing a call and the station receiving the call.

c) To provide multi-mode communications between the INMARSAT station placing a call and the coast radio station that will deliver it.

d) To determine which satellite is best suited to provide communications between the INMARSAT station placing a call and the station receiving the call.

121. What comprises an INMARSAT-A subscriber number?

a) Seven digits beginning with a one (1).

b) Nine digits beginning with a three (3).

c) Nine digits beginning with a four (4).

d) Nine digits beginning with the country code associated with the country in which the vessel is registered.

122. What comprises an INMARSAT-B subscriber number?

a) Seven digits, beginning with a one (1).

b) Nine digits, beginning with a three (3).

c) Nine digits, beginning with a four (4).

d) Nine digits, beginning with the country code associated with the country in which the vessel is registered.

123. What comprises an INMARSAT-C subscriber number?

a) Seven digits, beginning with a one (1).

b) Nine digits, beginning with a three (3).

c) Nine digits, beginning with a four (4).

d) Nine digits, beginning with the country code associated with the country in which the vessel is registered.

124. What is the country code for placing a voice call to a corporate office in the United States through INMARSAT-A?

a) 01#.
b) 01+.
c) 1.
d) 581 if the vessel placing the call is using AOR-E, and 584 if the vessel is using AOR-W.

125. Which of the following two-way modes of communications are available when using INMARSAT-C?

a) Telex.
b) Fax.
c) 14400 BPS Data.
d) Voice.

126. Which of the following two-way communications can be made through INMARSAT without charge?

a) A service message that advises a vessel of other ship traffic in its vicinity.
b) SafetyNET.
c) Distress traffic.
d) Vessel position information when the ship's GPS fails.

127. How is a signal radiated from an INMARSAT-C system's antenna?

a) It is a highly focused directional signal that must be beamed at the desired satellite.
b) It is usually radiated in an omnidirectional pattern, but an optional feature allows it to be directional for use when the vessel is on the fringe of the satellite's footprint.
c) It is radiated in an omnidirectional pattern.
d) It is radiated in an omnidirectional pattern that can be reversed by the Operator to attain directional beaming to an alternate satellite.

128. How is a signal radiated from an INMARSAT-A system's antenna?

a) It is a highly focused directional signal that must be beamed at the desired satellite.
b) It is usually radiated in an omnidirectional pattern, but an optional feature allows it to be directional for use when the vessel is on the fringe of the satellite's footprint.
c) It is radiated in an omnidirectional pattern.
d) It is radiated in an omnidirectional pattern that can be reversed by the Operator to attain directional beaming to an alternate satellite.

129. How is a distress message normally initiated through INMARSAT?

a) All INMARSAT units have a dedicated key that can be pressed for immediate action.

b) By adding the word "DISTRESS" in the first line of the message's preamble.

c) Certain INMARSAT units have a dedicated key that can be pressed for immediate action, while other systems provide menu-driven features.

d) By transmitting the distress message on the U.S. Coast Guard's dedicated monitoring channel.

130. Which of the following statements concerning exposure to microwave signal radiation is true?

a) There is minimal hazard potential as long as the Operator notifies other system users aboard the vessel that the potential exists.

b) The INMARSAT-A radome normally prevents nearby persons from being able to determine the direction of the internal antenna.

c) There is equally significant hazard potential from all INMARSAT antenna systems.

d) FCC type acceptance regulations require that radiated power be kept to a minimum so as to prevent hazard potential.

131. Which of the following statements concerning geostationary satellites is true?

a) They are in a low-earth polar orbit to provide true global coverage.

b) They are in an equatorial orbit to provide true global coverage.

c) They provide coverage to vessels in nearly all of the world's navigable waters.

d) Vessels sailing in equatorial waters are able to use only one satellite whereas other vessels are able to choose between at least two satellites.

132. What information is input to a shipboard INMARSAT-A system to maintain its antenna pointed at the desired satellite?

a) No information is necessary because an INMARSAT-A antenna is omni-directional.

b) The vessel's position must be automatically or manually input.

c) INMARSAT-A satellites are in an elliptical orbit that prohibits the Operator from ensuring that the antenna stays on course.

d) Continual position data feeds are not necessary once the antenna is initially aimed at the satellite.

133. How are INMARSAT working channels assigned?
a) The vessel that will place the call monitors the CES broadcasts to determine channel assignments.
b) Random channel assignments occasionally cause interference to calls that are already in progress, forcing the vessel that placed the call to abandon the operation and re-initiate.
c) The NCS assigns the working channel that will be used by the vessel placing the call and the CES.
d) Channel saturation is common, and often causes INMARSAT calls to be delayed or impossible.

134. What is the purpose of requesting an answerback?
a) This verifies that the call was established with the desired station.
b) This signals the CES that the call has been completed and that the time charges should be given.
c) This identifies the CES to the vessel placing the call.
d) This confirms that the station called received the entire message and without errors.

135. Which of the following statements concerning INMARSAT-A is false?
a) Communications requires a highly focused, directional antenna.
b) All modes, including data communications, are possible.
c) Standard-A service is available through all INMARSAT satellites.
d) True global coverage is available.

136. Which non-routine message traffic is provided by specialized registered sources for the purpose of INMARSAT broadcasting to specific ocean regions?
a) FleetNET.
b) Digital Selective Calling.
c) SafetyNET.
d) Maritime Traffic Information (MTI).

137. How should data or fax transmissions be made through INMARSAT-A?
a) Data and fax communications are not possible through INMARSAT-A.
b) They are made by placing a voice call with compandors.
c) They are made by placing a telex call with compandors.
d) They are made by placing a telex call without compandors.

138. When logging into the INMARSAT Satellite system using INMARSAT-C, it is necessary to:
a) Enter your MESIN.
b) Enter the CES answer back.
c) Enter the Ocean Region and NCS.
d) Call the CES and inform them that you are now operating in the appropriate ocean region.

NAVTEX

1. Please define the acronym MSI.

2. Give and example of a valid NAVTEX message header containing the transmitter identification message category and serial number.

3. What categories of NAVTEX messages may not be selectively rejected through receiver programming?

4. What category of NAVTEX message may be rejected in some receivers, BUT SHOULD NOT?

5. To ensure receipt of all relevant MSI, a NAVTEX receiver should be turned on at least how many hours prior to departure from port?

6. When a NAVTEX receiver determines it has received text in error, what is normally printed?

7. On what date must GMDSS compulsory ships be fitted with a NAVTEX receiver?

8. NAVTEX receivers use NBDP to receive and automatically print what type of information?

9. What international direct-printing service promulgates MSI in English with an intended coastal water range of 200-400 miles (320-640 km)?
a) NAVAREA broadcasts.
b) NOAA weather broadcast.
c) HF facsimile.
d) NAVTEX.

10. Which of the following NAVTEX questions is false?
a) NAVTEX is a single frequency SITOR system that transmits FEC broadcasts on 518 kHz.
b) A selective message-rejection feature of the receiver allows the mariner to receive only that safety information pertinent to his requirements.
c) NAVTEX is broadcast only in the local language of the coast station and adjacent NAVAREAs.
d) NAVTEX carries information relevant to all sizes and types of vessels within a region established for this service.

11. Which media are used to receive MSI?
a) NAVTEX.
b) SafetyNET.
c) HF NBDP.
d) All of these.

12. How is mutual interference among NAVTEX stations avoided?
a) Stations are limited to daytime operation only.
b) Transmitter power is limited to that necessary for coverage of assigned area.
c) Transmissions by stations in each NAVAREA are arranged in a time-sharing basis.
d) Both b and c.

13. How can reception of certain NAVTEX broadcasts be prevented?
a) Stations are limited to daytime operation only.
b) The receiver can be programmed to reject certain stations and message categories.
c) Coordinating reception with published broadcast schedules.
d) Automatic receiver desensitization during night hours.

14. When do NAVTEX broadcasts typically achieve maximum transmitting range?
a) Local noontime.
b) Middle of the night.
c) Sunset.
d) Post sunrise.

15. What should a GMDSS Radio Operator do if a NAVTEX warning message is received but it contains too many errors for it to be usable?
a) Vital messages will be repeated.
b) Contact the NAVAREA coordinator and request a repeat broadcast.
c) The hurricane will be upon the vessel; they're in big trouble.
d) Listen to appropriate VHF weather channel for repeat warnings.

16. Which of the following is most likely to cause deterioration to thermal printing paper which is used in most NAVTEX receivers?
a) RF signals.
b) INMARSAT signals.
c) Exposure to cool air.
d) Light.

17. How can MSI be received if your NAVTEX receiver becomes inoperative or your vessel is out of reception range of a NAVTEX transmitting station?

a) MSI can be requested by sending a telex to the U.S. Coast Guard via INMARSAT.

b) MSI broadcasts are received also by INMARSAT SafetyNET, SITOR broadcasts on HF, or by tuning an HF SITOR receiver to 518 kHz.

c) NAVTEX's alternate HF frequency of 8414.5 kHz is usually an adequate substitute.

d) Reception of MSI is not necessary only if, in the master's prudent judgement, the safety of the vessel, its crew, or that of other vessels will not be jeopardized.

18. How is a NAVTEX receiver programmed to reject certain messages?

a) The transmitting station's two-digit identification can be entered to de-select reception of its broadcasts.

b) By selecting a message category's single letter (A-Z) identifier.

c) By entering the selcall of the transmitting station.

d) By pressing "00" in the transmitter's ID block.

19. How are NAVTEX messages formatted?

a) A single letter (A-Z) indicates the NAVTEX transmitting station.

b) A two-digit number (01-99) indicates the NAVTEX message category.

c) Message numbers include a date/time group along with the transmitting station's numerical ID.

d) None of these.

20. Which of the following functions is not the responsibility of a GMDSS Radio Operator?

a) Replacement of the processor.

b) Replacement of fuses.

c) Self-diagnostic processor and printer tests.

d) Erasing stored message IDs.

21. Which of the following statements is true?

a) The GMDSS Radio Operator can program the NAVTEX receiver to automatically reject any category of messages under the master's authority.

b) The GMDSS Radio Operator can program the NAVTEX receiver to reject all messages except navigation warnings, meteorological warnings, and search and rescue information.

c) The GMDSS Radio Operator can select the "None" option in the message category menu.

d) Upon entering a new NAVTEX station's broadcast range, the GMDSS Radio Operators enters the station's selcall number.

22. Which of the following message categories cannot be disabled by the GMDSS Radio Operator?
a) Navigational warnings.
b) Meteorological warnings.
c) Search and Rescue information.
d) All of the above.

23. What does a NAVTEX receiver do when it runs out of paper?
a) The unit cannot operate, and all subsequent MSI broadcasts are missed until the paper is replaced.
b) It will give off either an audible and/or visual alarm.
c) The system will automatically change from receiving MSI by NAVTEX to receiving it by SafetyNET so that no messages will be lost.
d) All of the above.

24. Which NAVAREA is best associated with the western North Atlantic and the Caribbean Sea?
a) NAVAREA IV.
b) NAVAREA X.
c) NAVAREA XI.
d) NAVAREA XII.

25. Which NAVAREA is best associated with the Pacific Ocean north of the equator and east of the International Date Line?
a) NAVAREA IV.
b) NAVAREA X.
c) NAVAREA XI.
d) NAVAREA XII.

26. How are NAVTEX broadcasts transmitted?
a) The "B block" includes the identification the transmitting station plus the message category.
b) NAVTEX is transmitted by commercial coast radio stations following their traffic lists.
c) NAVTEX is transmitted only when an urgency or distress broadcast is warranted.
d) No more often than every two hours and should immediately follow the radiotelephone silent periods.

27. Which of the following is the primary frequency that is used exclusively for NAVTEX broadcasts internationally?
a) 518 kHz.
b) 2187.5 kHz.
c) 4209.5 kHz.
d) VHF channel 16 when the vessel is sailing in Sea Area A1, and 2187.5 kHz when in Sea Area A2.

28. Which of the following can cause bad reception of a NAVTEX broadcast?
a) Selective fading.
b) Distortion of the incoming signal.
c) Static electricity, such as lightning.
d) All of the above.

29. What is the transmitting range of most NAVTEX stations?
a) Typically 50-100 nautical miles (90-180 km) from shore.
b) Typically upwards of 1000 nautical miles (1800 km) during the daytime.
c) It is limited to line-of-sight or about 30 nautical miles (54 km).
d) Typically 200-400 nautical miles (360-720 km).

SAFETYNET

1. Please define the acronym EGC.
2. Please define the acronym IHO.
3. What technique is used to broadcast MSI to ships at sea in both fixed and variable geographical areas?

4. MSI is broadcast over INMARSAT satellites on the designated EGC channel.

TRUE FALSE

5. SafetyNET uses FEC techniques to reduce or eliminate reception errors.

TRUE FALSE

6. Ships equipped with a dedicated SafetyNET receiver or optional receiver integrated into an existing SES may receive MSI.

TRUE FALSE

7. "Stand-Alone" EGC receivers may be used for automatic reception and printout of MSI and commercial information broadcast via INMARSAT-C

TRUE FALSE

8. "Stand-Alone" EGC receivers typically contain a built-in thermal printer which provides automatic printout of MSI.

TRUE FALSE

9. Some national administrations require uninterrupted EGC reception for their ships to comply with GMDSS.

TRUE FALSE

10. When urgent or distress messages are received via SafetyNET, how does an INMARSAT-C receiver respond?

11. SafetyNET receivers are able to reject all but what types of MSI messages?

12. For ships in distress and rescue coordination communications, temporary geographical areas may be established for the broadcast of MSI via what technique?

13. Navigational warnings are provided by continuous SafetyNET broadcast over the satellite to NAVAREAS IV and XII.

TRUE FALSE

14. For SafetyNET receivers to operate properly and receive desired MSI, what is one input that should be programmed into the EGC setup?

15. Non-volatile memory in a SafetyNET receiver will be erased upon loss of power to the unit.

TRUE FALSE

16. An automated system that is capable of addressing messages to ships in pre-determined groups or to all ships in both fixed and variable geographic areas is known as what?

a) NAVTEX.
b) EGC.
c) AFRTS.
d) NAVAREAs.

17. How are Enhanced Group Calls transmitted?

a) By COSPAS satellite.
b) By HF SITOR shore stations.
c) By NAVTEX shore stations.
d) By INMARSAT satellite.

18. What system may be useful for messages, such as local storm warnings or a shore-to-ship distress alert, for which it is inappropriate to alert all ships in the satellite coverage area?

a) NAVTEX.
b) EGC.
c) AMVER.
d) DSC.

19. Where NAVTEX cannot be feasibly established, what system can be implemented to provide an automated service in coastal waters to receive MSI?
a) SafetyNET.
b) AMVER.
c) VHF DSC.
d) ARQ SITOR.

20. SafetyNET promulgates what type of information?
a) MSI.
b) Traffic Lists.
c) USCG advisories.
d) MARAD.

21. What action should a GMDSS Radio Operator take when SafetyNET distress or urgency messages are received by the vessel's EGC receiver?
a) No immediate action is required as an audible tone will be generated at the beginning and end of the transmission and a paper printout of the message will be generated.
b) Aural and visual alarms are activated, and require manual deactivation.
c) No immediate action is required by the operator since the transmission will be automatically acknowledged by the receiving vessel.
d) A periodic alarm tone will be heard until the radio operator prints the message from the unit's memory.

22. What additional equipment provides the maximum availability for receiving MSI broadcasts when the associated INMARSAT-C is being used for telex communications?
a) An integrated ECG receiver with the existing Standard-C equipment.
b) A separate EGC receiver.
c) HF SSB can be used to receive voice MSI broadcasts.
d) Automatic switching between INMARSAT-C and EGC functions.

23. What kind(s) of broadcasts are available through SafetyNET?
a) MSI and messages to pre-defined groups of subscribers.
b) MSI and vessel traffic lists.
c) Hourly NOAA weather broadcasts from the NWS.
d) Coastal weather broadcasts.

24. What is the purpose of Maritime Safety Information broadcasts?
a) To provide hourly NOAA weather broadcasts from the NWS.
b) To provide U.S. Coast Guard Group broadcasts.
c) To maximize reception of mobile distress alerts, weather forecasts, coastal warnings and similar information.
d) To allow the transmission of messages to pre-defined groups of subscribers.

25. Which satellite system promulgates Maritime Safety Information?
a) AMVER.
b) SafetyNET.
c) NAVTEX.
d) INMARSAT-M SES.

HF MSI

1. Which U.S. Coast Guard communication station (COMSTA) transmits MSI by HF SITOR covering NAVAREA IV?
a) COMSTA Miami/NMA.
b) COMSTA Boston/NMF.
c) COMSTA Point Reyes/NMC.
d) COMSTA Honolulu/NMO.

2. What frequencies are used for receiving HF MSI?
a) HF MSI is transmitted on a primary frequency of 518 kHz and on a secondary frequency of 490 kHz.
b) HF MSI is transmitted on 8414.5 kHz plus one other (undesignated) HF frequency.
c) HF MSI is transmitted on the third ITU channel in each HF band (4, 6, 8, 12, 16, and 22 MHz).
d) HF MSI is transmitted on certain dedicated frequencies.

3. Ships that sail in sea area A4 can receive MSI by what systems?

4. When sailing beyond NAVTEX coverage in sea area A4, what system provides uninterrupted receipt of MSI?

5. MSI is transmitted by GMDSS shore-based facilities via HF NBDP at designated broadcast times.

TRUE FALSE

6. How many frequencies are used to broadcast MSI via HF NBDP?

7. MSI transmitted by HF NBDP uses the EGC technique.

TRUE FALSE

8. What technique is used to improve data throughput in marginal circuit conditions during HF NBDP broadcasts?

9. HF communications use sky wave propagation which is subject to atmospheric conditions.

TRUE FALSE

10. The quality of HF communications can change dramatically depending on time of day, and solar conditions.

TRUE FALSE

11. HF receivers provide for the selective rejection of how many types of MSI messages?

12. Which is the following HF frequencies is internationally allocated for use for transmitting NAVTEX-type broadcasts?

a) 4209.5 kHz using FEC mode.
b) 4209.5 kHz using ARQ mode.
c) 8414.5 kHz plus one other.
d) NAVTEX-type broadcasts are not transmitted on any HF frequency.

HF NBDP SITOR

1. Please define the acronym ARQ.
2. Please define the acronym CRS.
3. Please define the acronym FEC.
4. Please define the acronym HF.
5. Please define the acronym NBDP.
6. Please define the acronym SELCALL.
7. Please define the acronym TOR.

8. What is the usual purpose of pairing frequencies together in duplex communications?

a) These are normally used for FEC communications with coast radio stations.
b) These are normally used for ARQ communications with coast radio stations.
c) These are normally used only for distress communications to limit channel interference.
d) These are normally used for DSC communications with coast radio stations.

9. Which of the following defines "ITU Channel 1216"?

a) Channel 12 in the 16 MHz band.
b) Channel 16 in the 12 MHz band.
c) Channel 1216 in the MF band.
d) This would indicate the 16th channel in the 12 MHz band, but channel 1216 does not yet exist as there are currently only 15 possible channels.

10. What form of identification does a GMDSS station use when communicating by HF NBDP?

11. What is the meaning of the operational signal GA+?

12. What is the meaning of the operational signal K?

13. What is the meaning of the operational signal OCC?

14. What is the meaning of the operational signal QSX?

15. What is the meaning of the operational signal QSW?

16. What is the meaning of the operational signal QSL?

17. What is the meaning of the operational signal QTH?

18. What is the meaning of the operational signal QTC?

19. Which of the following is a valid 22-MHz ITU Channel?
a) VHF channel 22.
b) HF channel 2206.
c) Channel 22A when used for VTS communications.
d) Channel 70 (DSC only).

20. Which of the following would be a valid selcall for use in ARQ communications?
a) 1106.
b) 212420 WHAQ X.
c) Four marks (ones) and three spaces (zeroes) forming the binary signal "1001101"
d) This is established by the communications protocol used with the modem.

21. What is meant by the abbreviation ATOR?
a) Automatic Telex Over Radio.
b) AMVER Transmittals Over Radio.
c) Amateur Telex Over Radio.
d) None of the above.

22. Which of the following abbreviations refers to a communications system that does not employ some form of ATOR?
a) NAVTEX.
b) SITOR.
c) NAVCOMSTA.
d) NBDP.

23. Which of the following statements concerning SITOR communications is true?
a) In ARQ, each character is transmitted twice, about 250 milliseconds apart.
b) In ARQ, the "information sending station" transmits a block of three characters twice, about 250 milliseconds apart.
c) In ARQ, the "information sending station" will transmit a block of three characters that the receiving station will subsequently acknowledge or request be retransmitted.
d) SITOR communications can be used to contact a NAVTEX transmitting station when requesting a repeat transmission of a missed NAVTEX message.

24. Which of the following functions is not a requirement of certain GMDSS equipment?

a) Watchkeeping on 2187.5 kHz DSC
b) Follow-on communications using SITOR on 2182 kHz.
c) MF and HF frequencies for follow-on communications in both radiotelephone and telex modes.
d) Multiple frequency capability in the DSC HF system.

25. Which of the following keystrokes or characters is sent as part of ARQ communications to switch information transmission control from one station to the other?

a) The plus and question mark keys ("+", "?").
b) The go-ahead ("GA") command.
c) The "ENTER" key.
d) The "END" key.

26. Which of the following keystrokes or characters follows most commands in an ARQ communications?

a) The plus ("+") key.
b) The go-ahead ("GA") command.
c) The "ENTER" key.
d) The "END" key.

27. Once ARQ communications with the coast radio station has been established, which of the following exchanges will most likely take place?

a) The vessel then requests the coast radio station's selcall so that communications can be set up on the appropriate working channel.
b) Since communications has already shifted to the working channel, the vessel then transmits the subscriber number and text of the message to be sent for the coast radio station to store and forward.
c) After exchanging answerbacks with the vessel, the coast radio station transmits "GA+".
d) None of the above.

28. Which of the following keystrokes or characters is sent as part of ARQ communications to initiate the transmission of a direct telex call?

a) "MSG+".
b) "GA+".
c) "ENTER".
d) "DIRTLX".

29. Which of the following keystrokes or characters is sent as part of ARQ communications to end the radio link?

a) Four "N"s , i.e. "NNNN".
b) Four "K"s, i.e. "KKKK".
c) "BRK+".
d) Five periods (". . . . .").

30. Which of the following keystrokes or characters is sent as part of ARQ communications to signal the end of the text of a chargeable message?

a) Four "N"s, i.e. "NNNN".
b) Four "K"s, i.e. "KKKK".
c) "BRK+".
d) Five periods (". . . . .").

31. Which of the following methods will give a GMDSS Radio Operator the best indication of whether ARQ communications can be established with a coast radio station?

a) Referring to propagation charts will tell the Operator when the eruption of communications-shattering solar flares will occur.
b) Selecting a frequency in the MF band averts interference from severe static discharges.
c) Monitor the coast radio station's "free signals" and call on the frequency on which the loudest and most consistent signals are heard.
d) Re-position the radome's antenna toward the coast radio station and press the "call request" button.

32. Which of the following statements concerning SITOR communications is true?

a) Communications is established on the working channel and answerbacks are exchanged before FEC broadcasts can be received.
b) Two-way communications with the coast radio station using FEC is not necessary to be able to receive the broadcasts.
c) Weather broadcasts cannot be made in FEC because sending each character twice would cause the broadcast to be prohibitively long.
d) None of the above.

33. What is meant by the term "ITU channel"?

a) This refers to a vessel's selcall number.
b) This refers to an internationally standardized assignment of frequency pairings for common use.
c) This refers to VHF channels 1-28 and 60-88.
d) None of the above.

34. Which of the following statements concerning SITOR communications is true?
a) ARQ transmissions are made in data groups consisting of three-character blocks.
b) ARQ transmissions are acknowledged by the Information Receiving Station only at the end of the message.
c) ARQ communications rely upon error correction by time diversity transmission and reception.
d) Forward error correction is an interactive mode.

35. Under what condition would the Information Sending Station send a block of three RQs?

36. Ship to shore telex can be sent via satellite or terrestrial NBDP communications. Which system uses "KKKK" in the procedure?

37. What three letters describe the mode that would be used to send a direct telex through a coast station?

38. What three letters describe the mode that would be used to copy a traffic list from a coast station?

39. What is the SITOR command used in connection with a direct telex message?

40. How many digits does a coast station selcall number contain?

41. What characters would be used in SITOR to indicate a desire to be connected to a coast station operator?

42. A ship has linked up with a coast radio station on SITOR and the coast radio station has transmitted its WRU. What will the ship then transmit?

43. What term is used to refer to a station that initiates a SITOR communications with another station?
a) Information Sending Station.
b) Master Station.
c) Broadcasting Station.
d) Information Transmitting Station.

44. What HF data mode would you use to establish two-way communications with a Coast Guard station?

45. When placing a MF/HF call to a Coast Station, you should always:
a) Choose the closest station.
b) Make sure the frequency is not occupied.
c) Tune the transmitter on another frequency.
d) Wait until the coast station sends his Traffic List.

DIGITAL SELECTIVE CALLING

1. Please define the acronym DSC.

2. Please define the acronym MID.

3. What form of identification does a GMDSS station use when communicating by DSC?

4. You are at sea and receive a DSC distress message on 2187.5 kHz. Approximately how long should you wait before attempting to respond to the distress vessel?

5. If your DSC VHF radio is set to channel 13, can it receive a DSC distress call on channel 70?

6. How often must DSC equipment be updated with navigation position information if it is not done automatically?

7. While at sea, all GMDSS ships must maintain a continuous watch on what VHF DSC Channel?

8. If a GMDSS ship is equipped with an MF radio installation to meet ship radio equipment requirements for sea areas A1 and A2, it must maintain a continuous watch on what distress and safety DSC frequency?

9. If a GMDSS ship is equipped with an HF radio installation to meet ship radio equipment requirements for sea areas A1, A2 and A3, or sea areas A1, A2, A3 and A4, it must maintain a continuous watch on what distress and safety DSC frequency?

10. Are you permitted to use your VHF DSC radio for normal ship's business communications?

11. You receive a DSC call requesting a reply using J3E communications. What mode or type of communications are you to use?

12. What is the VHF DSC frequency?

13. You receive a DSC call requesting a reply using F1B communications. What mode or type of communications are you to use?

14. What sea area is within radiotelephone coverage of at least one VHF coast station in which continuous DSC alerting is available?

15. What sea area is within radiotelephone coverage of at least one MF coast station in which continuous DSC alerting is available?

16. GMDSS incorporates DSC equipment, NBDP equipment, satellite communications equipment, and voice equipment among others. Which equipment uses an MMSI number?

17. The 2 Mhz band is used for MF DSC distress communications. List the 5 HF bands used for DSC distress communications.

18. Which of the following statements concerning DSC equipment is true?
a) The GMDSS Radio Operator is responsible for properly selecting HF DSC guard channels.
b) All equipment must be type accepted.
c) The vessel's navigational position must be updated, either automatically or manually, no less often that every four (4) hours.
d) All of the above.

19. Which of the following is not a DSC watch frequency?
a) 2187.5 kHz.
b) 6312 kHz.
c) 2182 kHz.
d) 12577 kHz.

20. Which of the following channels and modes should be used when initiating a distress alert transmission?
a) Channel 6 DSC.
b) Channel 6 Radiotelephony.
c) Channel 13 Radiotelephony and channel 16 DSC.
d) Channel 70 DSC.

21. What is the action that a GMDSS Radio Operator should take when a DSC distress alert is received?
a) No action is necessary, as the DSC control unit will automatically switch to the NBDP follow-on communications frequency.
b) The Operator should immediately set continuous watch on the radiotelephone frequency that is associated with frequency band on which the distress alert was received.
c) The Operator should immediately set continuous watch on VHF channel 70.
d) The Operator should immediately set continuous watch on the NBDP frequency that is associated with frequency band on which the distress alert was received.

22. What is the purpose of a DSC control unit?
a) It decodes and displays the message.
b) It will store the message internally until manually retrieved.
c) It will automatically acknowledge routine DSC calls.
d) All of the above.

23. What does the DSC control unit do if the GMDSS Radio Operator fails to insert updated information when initiating a DSC distress alert?
a) It will abort the transmission and set off an audible alarm that must be manually reset.
b) It will initiate the DSC distress alert but, as no information will be transmitted, rescue personnel will not be able to identify the vessel, its position, or its situation.
c) It will initiate the DSC distress alert, and default information will automatically be transmitted.
d) It will initiate the DSC distress alert, but any station receiving it will have to establish contact with the distressed vessel to determine its identity, position, and situation.

24. How many total frequencies are available for DSC distress alerting?
a) One (1).
b) Two (2).
c) Five (5).
d) Seven (7).

25. Which of the following watches must a compulsory vessel maintain when sailing in Sea Area A1?
a) A continuous DSC watch on 8414.5 kHz plus one other HF DSC frequency.
b) A continuous DSC watch on 2187.5 kHz.
c) A continuous DSC watch on Channel 16.
d) A continuous DSC watch on Channel 70.

26. When must a compulsory vessel carry equipment that is capable of DSC alerting and reception in the MF band?
a) When operating within Sea Area A1.
b) Only when operating outside Sea Area A1.
c) Anytime at sea.
d) All of the above.

27. What is the primary purpose for Digital Selective Calling (DSC)?
a) DSC provides reception of weather and navigational warnings plus search and rescue information.
b) DSC provides low-cost, routine communications for the vessel operator.
c) DSC is to be used for transmitting and receiving distress alerts to and from other ships or coast radio stations via radio.
d) This aids SAR authorities in tracking a vessel's position by satellite.

28. What is the fundamental purpose of a coast radio station?
a) To provide a delivery service for ships with routine, safety, urgency, or distress message traffic.
b) To automatically connect a vessel placing an INMARSAT call with the station being called.
c) To coordinate search and rescue communications.
d) To provide continuous digital selective calling coverage.

29. What is the proper term used to describe a coast radio station that primarily handles chargeable ship-to-shore message traffic of a routine nature?
a) Public Correspondence Station.
b) Accounting authority.
c) Mobile Radio Service.
d) Network Coordination Station.

30. A DSC call with the MMSI number 003669991 is:
a) A vessel operating in Sea Area A3.
b) A group call.
c) A U.S. coast station.
d) An Intercoastal vessel.

EMERGENCY PROCEDURE

1. Please define the acronym SAR.

2. What is the fundamental purpose for imposing radio silence?
a) To ensure that interference to proprietary communications is minimized.
b) To ensure that only voice communications can be effected on the distress communications frequency or channel.
c) To ensure that a distressed vessel will have a "window" twice each hour for transmitting routine messages.
d) To ensure that interference on a particular frequency or channel to communications concerning emergency traffic is minimized.

3. When can routine communications be resumed on a frequency or channel on which radio silence has been imposed?

a) Routine communications can resume after determining that the frequency or channel appears to be no longer in use.

b) Routine communications can resume after determining that geographic distance from the distress situation will prohibit any other signal from interfering with emergency communications.

c) Routine communications can resume after the Rescue Coordination Center transmits a message on the frequency or channel being used for emergency communications stating that such traffic has concluded.

d) Routine communications can resume if, in the master's opinion, communications on that frequency or channel will interfere with emergency communications.

4. Which of the following steps should be taken, if possible, when the vessel must be abandoned because of a distress situation?

a) Alert the U.S. Coast Guard by using the survival craft's portable INMARSAT unit.

b) Program the SART and EPIRB to transmit the vessel's location and situation.

c) Place the SART and EPIRB in the "on" position and secure them to the survival craft.

d) No additional steps are needed as the SART and EPIRB will both automatically float free and operate properly.

5. Who is responsible for transmitting a message stating that distress communications have ceased?

a) The Rescue Coordination Center (RCC) controlling the distress communications.

b) The vessel providing the initial communications with the distressed vessel.

c) The Coast Radio Station (CRS) that was first contacted concerning the distress situation.

d) No formal message must be transmitted as long as no distress-related communications have occurred after reasonable time.

6. What is meant by the term "radio silence"?

a) Stations not directly involved with the on-going distress communications may not transmit on the distress frequency or channel.

b) Stations remaining off the air to safeguard proprietary information.

c) Two three-minute silent periods, at the top and bottom of every hour, that provide a transmitting "window" for distressed vessels to transmit distress alerts.

d) Communications on a distress frequency or channel is banned for 24 hours following the cessation of the distress traffic.

7. How is "radio silence" imposed?

a) It is imposed by the Rescue Coordination Center (RCC) controlling the distress communications on that frequency or channel.

b) It is imposed by the Coast Earth Station (CES) controlling the distress communications on that frequency orchannel.

c) It is imposed by the Public Correspondence Station (PCS) controlling the distress communications on that frequency or channel.

d) It is imposed by the High Seas Service (HSS) controlling the distress communications on that frequency or channel.

8. How is a normal working condition restored on a narrow band direct printing (NBDP) frequency on which radio silence had been imposed?

a) The Rescue Coordination Center (RCC) that imposed the radio silence must transmit a narrow band direct printing message on the distress frequency stating "SILENCE FINI".

b) The Coast Earth Station (CES) that imposed the radio silence must transmit a narrow band direct printing message on the distress frequency stating "SILENCE FINI".

c) The Public Correspondence Station (PCS) that imposed the radio silence must transmit a narrow band direct printing message on the distress frequency stating "SILENCE FINI".

d) The High Seas Service (HSS) that imposed the radio silence must transmit a narrow band direct printing message on the distress frequency stating "SILENCE FINI".

9. How is a normal working condition restored on a voice frequency or channel on which radio silence had been imposed?

a) The Rescue Coordination Center (RCC) that imposed the radio silence must transmit a voice message on the distress frequency stating "SILENCE FINI".

b) The Coast Earth Station (CES) that imposed the radio silence must transmit a voicemessage on the distress frequency stating "SILENCE FINI".

c) The Public Correspondence Station (PCS) that imposed the radio silence must transmit a voice message on the distress frequency stating "SILENCE FINI".

d) The High Seas Service (HSS) that imposed the radio silence must transmit a voicemessage on the distress frequency stating "SILENCE FINI".

10. Which of the following statements best describes the AMVER system?

a) This system aids search-and-rescue agencies worldwide in tracking vessels in order to best coordinate rescue efforts when needed.

b) Participation in this system by U.S.-flag merchant vessels is optional.

c) Information in the system can be easily downloaded by private individuals who demonstrate a need to obtain the data from the U.S. Coast Guard.

d) Vessels that participate in the AMVER may use the system to track other vessels.

11. Which statement is false regarding a distress request?

a) Any distress request is automatically switched to an INMARSAT distress working frequency.

b) If all satellite channels are busy, one of them will be preempted by a distress request.

c) The NCS in each ocean region automatically monitors the processing of such calls by other CESs in that region, and processes calls if any anomaly exists in the system.

d) Any request message with distress priority is automatically recognized by the CES and a satellite channel is instantly assigned.

12. What is usually the first step for a GMDSS Radio Operator to take when initiating a distress priority message via INMARSAT?

a) By dialing the correct code on the telephone remote unit.

b) By pressing a “distress button” on the equipment.

c) By contacting the CES operator and announcing a distress condition is in existence.

d) By contacting the CES operator using the radiotelephone distress procedure “Mayday”... etc.

13. What organization conducts SAR operations in maritime areas adjacent to the United States and its territories?

14. Distress Message Controllers can be used to activate various GMDSS systems to transmit a distress alert.

TRUE FALSE

15. How does a Distress Message Controller respond to receipt of a distress alert?

16. What system uses a computer generated database to plot the voyages of ships at sea for purposes of search and rescue?

17. What voice procedure words indicate that you are relaying another ship's distress message?

18. Since most ships mute the 2182 kHz watch receiver, what transmission should you make on 2182 kHz before sending a voice distress call?

19. Please define the acronym RCC.

FUNDAMENTALS OF COMMUNICATION

1. Please define the acronym AGC.

2. Please define the acronym AM.

3. Please define the acronym FM.

4. Please define the acronym kHz.

5. Please define the acronym LF.

6. Please define the acronym MF.

7. Please define the acronym MHz.

8. Please define the acronym RF.

9. Please define the acronym SSB.

10. Please define the acronym UHF.

11. Please define the acronym VHF.

12. Which of the following systems provides maximum communications range?
a) MF SITOR.
b) INMARSAT.
c) Digital Selective Calling on 8414.5 kHz.
d) VHF ARQ.

13. Which of the following systems is most likely to be subject to fading or static interference?
a) HF SITOR.
b) INMARSAT.
c) Digital Selective Calling on channel 70.
d) VHF ARQ.

14. Which of the following systems is least likely to be subject to fading or static interference?
a) HF SITOR.
b) INMARSAT.
c) Digital Selective Calling on 8414.5 kHz.
d) VHF ARQ.

15. Which of the following frequency bands would most likely provide reliable communications between two stations that are 100 miles (160 km) apart?
a) The Low Frequency (LF) band.
b) The Medium Frequency (MF) band.
c) The High Frequency (HF) band.
d) The Very High Frequency (VHF) band.

16. Which of the following frequency bands would most likely provide reliable communications between two stations that are 15 miles (24 km) apart?

a) The Low Frequency (LF) band.
b) The Medium Frequency (MF) band.
c) The High Frequency (HF) band.
d) The Very High Frequency (VHF) band.

17. What device is used to check the specific gravity of lead-acid batteries?

18. What device is used to test a transmitter without placing the unit on the air?

ACRONYMS

1. Please define the acronym GMT.

2. Please define the acronym GPS.

3. Please define the acronym ICAO.

4. Please define the acronym IMO.

5. Please define the acronym ITU.

7. Please define the acronym SDR.

8. Please define the acronym SOLAS.

9. Please define the acronym TX

10. Please define the acronym USB.

11. Please define the acronym USCG.

MSI

1. When a ship sails outside of NAVTEX coverage area, what system may be used to receive MSI?

2. What three systems are used to promulgate MSI?

3. What satellite system is used to receive MSI?

4. What system is used to supply MSI to ships operating in GMDSS sea areas A1 and A2 where NAVTEX service is unavailable?

5. List two U.S. government agencies responsible for providing MSI?

6. What type of MSI message typically includes information concerning buoys out of position, new wrecks, floating debris, oil rig moves, naval gunfire exercises, unlit buoys, etc.?

7. What type of messages concern gale force winds and severe weather conditions which require transmission without delay?

8. What type of messages are broadcast as MSI upon receipt where subsequent information concerning safety of life at sea may be transmitted as soon as it becomes available?

9. What system was established by the IMO and IHO for the purpose of coordinating the promulgation of MSI to ships in 16 established NAVAREAs worldwide?

10. What is the name of the net associated with satellite INMARSAT-C MSI messages?

COAST RADIO STATIONS

1. How does a coast radio station communicating by HF radio normally identify itself?
a) By its subscriber number.
b) By its call sign.
c) By its MMSI.
d) By its MID.

2. What comprises a coast radio station's call sign?
a) Three numerals from a group assigned to the CRS' nation by the ITU.
b) Four numerals from a group assigned to the CRS' nation by the ITU.
c) Three letters from a group assigned to the CRS' nation by the ITU.
d) Four letters from a group assigned to the CRS' nation by the ITU.

3. What type of antenna is normally used aboard a vessel for HF SITOR communications?
a) Vertical.
b) Horizontal wire.
c) Parabolic dish.
d) Omnidirectional.

4. What type of antenna is normally used aboard a vessel for INMARSAT communications?

a) Vertical.
b) Horizontal wire.
c) Parabolic dish.
d) Dipole.

5. What type of antenna is normally used aboard a vessel for VHF voice communications?

a) Vertical.
b) Horizontal wire.
c) Parabolic dish.
d) Omnidirectional.

6. What is the term normally used to describe a scheduled broadcast by a coast radio station to identify those vessels for which the coast radio station is holding message traffic of a routine nature?

a) AAIC list
b) Traffic Radio Service (TRS).
c) Traffic list.
d) Mobile Traffic Radio Service (MTRS).

7. How often does a coast radio station that regularly broadcasts traffic lists transmit the list?

a) As often as is deemed necessary to effect delivery.
b) No less often than every four hours.
c) Only on an as-needed basis.
d) Once per 24-hour period.

8. Which of the following modes is/are normally used by most public correspondence stations?

a) SITOR and DSC.
b) SITOR and SSB.
c) SSB and INMARSAT.
d) SSB and DSC.

9. What is an accounting authority?

a) An agency responsible for collecting payments on behalf of a vessel.
b) An agency responsible for verifying the accuracy of a shipping company's financial records.
c) An agency responsible for settling a vessel's financial accounts for chargeable communications.
d) An agency responsible for establishing tariff rates for commercial communications.

10. What agency is responsible for settling a vessel's financial accounts for chargeable communications?

a) The vessel's home office.
b) The vessel's accounting authority.
c) The public correspondence station that handles the vessel's communications.
d) The vessel's charterer.

11. What message charges are typically incurred when sending a chargeable message of routine nature through a public correspondence station?

a) Ship station (SS) and land line (LL) charges.
b) Ship station (SS) and coast (CC) charges.
c) Ship station (SS), coast (CC), and land line (LL) charges.
d) Coast (CC) and land line (LL) charges.

12. What is a "service message"?

a) A message intended to inform a vessel of services that a public correspondence station can provide.
b) A message sent free of charge, intended to convey information about or for the receiving station.
c) A message from a vessel intended to inform another station of the vessel's on-the-air availability.
d) A message from a vessel intended to inform the agent or charterer in the vessel's destination port that the vessel is ready for loading or discharging cargo.

13. How are high seas (HF) radiotelephone communications initially established between a vessel and a public correspondence station?

a) The vessel listens for free signals and calls the public correspondence station on the NBDP calling channel with the strongest marker signal.
b) The vessel calls the public correspondence station on VHF Channel 16 and the two stations then switch to the working channel.
c) Public Correspondence Stations operate NBDP only.
d) The vessel calls and establishes voice contact with the public correspondence station on a channel that the station is known to monitor, and the two stations then proceed with their business without changing frequency.

14. What are the primary components of a formal message or cable sent from a vessel to a coast radio station for delivery?

a) Date/time group, address, text, and signature.
b) Preamble, address, text, and signature.
c) Preamble, service instructions, address, text, and signature.
d) Service instructions, address, text, and signature.

15. How are charges normally computed for a message that is sent by NBDP from a vessel to a public correspondence station for delivery?

a) They are normally computed based on the time duration (in minutes) of the communication.
b) They are normally computed based on the size (in bytes) of the communications.
c) They are normally computed based on the distance from the shore station to the destination.
d) They are normally computed based on the country being called and if the call will be via INMARSAT.

16. What is the best method for a GMDSS Radio Operator to determine which SITOR station to contact for the purpose of sending a chargeable message or cable?

a) Listen to each station's voice announcement and determine which channel(s) will be monitored.
b) Listen to each station's free signals, and call the station generating the loudest free signal marker.
c) Listen to each station's MSI broadcast to determine which public correspondence station to contact.
d) Listen to the U.S. Coast Guard's traffic list to determine which Coast Guard station will handle commercial traffic.

17. Which of the following is a source of basic, reliable propagation forecasting data that can be used by mariners as an aid in predicting the best frequency band to use for HF radio communications?

a) Hourly announcements from WWV and WWVH.
b) Hourly forecast broadcasts from CHU.
c) Every public correspondence station provides propagation forecasting services.
d) Doppler weather satellite broadcasts.

18. What is the correct procedure for calling another station using HF radiotelephone?

a) On a properly selected ITU channel, give the call sign of the ship being called three times using the ICAO alphabet, and the words "this is" followed by the call sign of the ship initiating the call three times, using the ICAO alphabet, and concluding with “over.”
b) Give the name of the ship being called three times, and the words "this is" followed by the name of the ship initiating the call three times, and concluding with "over."
c) Instruct the nearest public correspondence station to add the desired ship's call sign to the station's traffic list.
d) Notify the local vessel traffic service control station of your intention to contact a specific vessel, and request the VTS operator place the call on channel 22A.

19. What is the correct procedure for calling a coast radio station using HF radiotelephone?

a) On a properly selected ITU channel, give the call sign of the coast radio station being called three times using the ICAO alphabet, and the words "this is" followed by the call sign of the ship initiating the call three times, using the ICAO alphabet, and concluding with “over.”

b) On a properly selected ITU channel, give the name of the coast radio station being called three times, and the words "this is" followed by the name of the ship initiating the call three times, and concluding with "over."

c) Contact the nearest U.S. Coast Guard communications station and request that the desired ship's call sign be added to the station's traffic list.

d) Notify the local vessel traffic service control station of your intention to contact a specific vessel, and request the VTS operator place the call on channel 22A.

20. Through which coast radio station(s) may a U.S.-flag merchant vessel communicate?

a) Any coast radio station in the world that is licensed to provide such communications.

b) Any coast radio station in the world that is licensed to provide such communications, but prior authorization must be obtained for a U.S.-flag merchant vessel to communicate through a non-U.S. station.

c) The U.S. Coast Guard coordinates the communications and assigns the working channel.

d) Any coast radio station in the world that has been commissioned to provide such communications.

21. Who issues the license that authorizes a U.S.-based coast radio station to provide chargeable ship-to-shore message handling and delivery?

a) The IMO.

b) The U.S. signatory to INMARSAT.

c) The U.S. Coast Guard.

d) The FCC.